Salmonella vaccine
Vaccine's impact should hit agriculture first

Roy Curtiss III, Ph.D., professor and chairman of the Department of Biology, has announced development of two mutant strains of salmonella bacteria that can be used as a vaccine to prevent disease by salmonella in humans and animals.

Salmonella bacteria causes food poisoning in humans and disease in livestock. One species causes typhoid fever.

The first impact of the oral vaccine, which has been successfully tested in laboratory mice, is expected to be in agriculture, especially in the poultry industry where up to 60 percent of chickens raised for human consumption are infested with salmonella bacteria.

The breakthrough was accomplished through genetic engineering techniques that allowed Curtiss to delete two genes from salmonella bacteria that are needed for the bacteria to grow in animals or people. The result is harmless bacteria that can prevent disease by salmonella in humans and animals.

Curtiss is continuing his work with the mutant strains in day-old chickens and young turkeys. Eventually he will experiment with larger animals. He expects several years of research and development before the vaccine will become available commercially.

In theory, an oral vaccine similar to polio or flu vaccines could be developed for humans; the greatest need would be in Third World countries where typhoid fever still is a killer disease.

While it is unlikely that people, at least in developed countries, will be vaccinated against salmonella, Curtiss says agriculture is the logical place for the vaccine to make its first mark.

"If we can significantly reduce the incidence of salmonella in chickens, we should reduce the impact of the disease in humans," he says.

"But the profit margin is very small in poultry production, so a vaccine would have to be very inexpensive for farmers to use." It is thought NGF will be a much better vaccine than the oral vaccine developed in Russia for salmonella, which is not as effective.

Curtiss is hopeful that NGF could be marketed successfully when all three genes have been deleted from salmonella. He is looking into techniques that would allow two or three genes to be deleted and marketed.

Curtiss says the vaccine is not yet ready for commercialization, but it is expected to be available next year.

The new salmonella strains can be engineered to be bivalent, meaning they do more than one thing. Like a football player who is a triple threat or a musician who plays several instruments equally well, Curtiss' patented mutations are versatile.

What excites the scientist most is the ability of the mutant strains to carry antigens (toxins, proteins or carbohydrates) to the body so that the antibodies, triggered by the salmonella, give immunity to the specific disease.

In 1984, Curtiss developed, through genetic engineering, a vaccine against dental cavities by using non-disease-causing salmonella that carry surface proteins from the bacteria that form dental plaque. The antibodies induced in saliva then prevent bacteria from forming plaque, and thus cavities.

The mutant salmonella strains should improve the effectiveness of this dental cavities' vaccine, which is still in the experimental stage, Curtiss says.

In developing other vaccines against microbes that gather in those areas — vaccines against whooping cough in chickens and turkeys, and dental cavities in humans, for instance — the new salmonella strains can be engineered to be bivalent, meaning they do more than one thing. Like a football player who is a triple threat or a musician who plays several instruments equally well, Curtiss' patented mutations are versatile.

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Scientists gather for math conference

Scientists from around the world are meeting Aug. 4-7 at the Adam's Mark Hotel in St. Louis to discuss mathematical modelling, an expanding concept that cuts across many disciplines.

Co-sponsored by Washington University, the Sixth International Conference on Mathematical Modelling (ICMM) will feature 500 papers on aspects of mathematical modelling in engineering, biological, medical, social and military sciences.

Ervin R. Rodin, Ph.D., professor of applied mathematics and systems science, is co-chairman of the conference.

Mathematical modelling is the computerized study of mathematical equations that serve as models for physical or theoretical systems — the lift of an aircraft wing, for instance, the flow of blood through arteries, or evolutionary trends in biology.

The mathematical model allows scientists the opportunity to conjecture and hypothesize without having the real thing at their disposal.

Applications of mathematical modelling range from magnetics and fluid dynamics to medical imaging and graphics, population genetics, robotics and the Strategic Defense Initiative (SDI).

For more information, contact Patricia A. Busch, conference coordinator, Sixth ICMM, Washington University, Campus Box 1040, One Brookings Drive, St. Louis, Mo. 63130, 889-5806.

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Alliance award honors donor

Mrs. John S. Lehmann, a Life Member of Washington University’s William Greenleaf Eliot Society and a generous donor to the University, has been recognized as a recipient of the Alliance Appreciation Award.

The special recognition award, recently established by the Washington University Board of Trustees, was presented to Mrs. Lehmann by Chancellor William H. Danforth at a luncheon held recently in her honor.

The award symbolizes the alliance between the University and the larger society. It is awarded to individuals who, by unselfish commitment to humankind, have exemplified the ideals of the University and who, through their alliance with the University, have made the institution better and inspired others to do the same.

“I am very pleased with the establishment of this award and especially with the board’s selection,” said Danforth. “This serves only as a small token of appreciation for all that Mrs. Lehmann has done for the University. Her wonderful backing has contributed in so many ways to Washington University’s excellence.”

Among her many contributions to the University, Mrs. Lehmann established the John S. Lehmann Visiting Professorship of Law in 1980 in memory of her husband. Her gifts to the University include funds for medical school scholarships, the Clinical Sciences Research Building and campus beautification.

One of the original board members of the Women’s Society of Washington University, Mrs. Lehmann was awarded a life membership to the society in 1976. In her work with the Women’s Society, Mrs. Lehmann served on the Fine Furniture Committee, which obtained many of the furnishings for the University and Whittemore houses.

A longtime art enthusiast, she is a member of the St. Louis Art Museum Guild and patron of the St. Louis Art Museum. Mrs. Lehmann studied art with the late Corinne Gerhard, a member of the fine arts faculty.

Also in 1983, the American Physical Society created the George E. Pake Prize, an award for outstanding work by physicists combining research with leadership in management of research or development in industry.
Faculty promoted

The following faculty received promotions, effective July 1, 1987.

Hillman Campus

John R. Blecke, to associate professor of chemistry; Seth A. Carlin, to professor of music; Amand E. Carlson, to associate professor of physics; Robert F. Dynek, to professor of political science and planetary science; Carolyn Sue Gordon, to associate professor of material science and engineering; Richfield A. Knecht, to associate professor of psychology; William C. Kirby, to associate professor of history; Marilyn Kruskovski, to professor of biology; Robert E. Morley Jr., to associate professor of electrical engineering; Robert E. Morerell, to professor of Japanese language and literature; Nicholas Papanicolaou, to associate professor of physics; Dolores Pesci, to associate professor of music; Barbara G. Pickard, to professor of biology; Carol Lynne Tatlock, to associate professor of German; Karen L. Tokarz, to professor of law; Barry R. Weingast, to professor of political economics; Gerhard S. Williams, to professor of German; Edward N. Wilson, to professor of mathematics; Collete H. Winn, to associate professor of French.

School of Dental Medicine

Philip A. O sondoby, to associate professor of anatomy in the School of Dental Medicine.

School of Medicine

Hans Dieter Ambos, to research associate professor of medicine; Joseph T. Black, to associate professor of clinical orthopaedic surgery; Garrett M. Brodeur, to associate professor of pediatrics; Michael E. Cai, to associate professor of medicine; Judith M. Conner, to research assistant professor of surgery (general surgery); Philip L. Custer, to assistant professor of clinical orthopaedic surgery; Bahman Emami, to professor of radiology; Robert J. Fallon, to assistant professor of surgery (general surgery); Bahman Emami, to professor of radiology; Todd H. Wasser- man, to professor of radiology; Robert R. Kuske, to assistant professor of medicine; Thomas J. Rigg, to associate professor of clinical orthopaedic surgery; J. Michael Hatlelid, to associate professor of medicine; Jeffrey J. Gor- don, to professor of medicine; Mac O. Gordon, to assistant professor of biostatistics; David I. Gottlieb, to professor of neurobiology; Garrett M. Rothman, to associate professor of cancer biology in psychiatry; Laura A. H. White, to associate professor of surgery; James L. White, to associate professor of medicine; Michael D. Wright, to assistant professor of medicine.

School of Public Health

Ricciard A. Perlman, to assistant professor of neurobiology; Marc M. Green, to associate professor of medicine; Robert R. Kuske, to assistant professor of medicine; John J. Marsh, to professor of surgery (plastic and reconstructive surgery).

School of Pharmacy

Philippine O. Ondoby, to associate professor of physical therapy; Marc H. Schieber, to assistant professor of medicine; Earl R. Schultz, to professor of medicine; Joseph R. Simpson, to assistant professor of radiology; Brian K. Suarez, to professor of genetics in psychiatry; Samuel A. Ulick, to assistant professor of medicine; Donald A. Young, to research assistant professor of medicine.

School of Social Sciences

J. Michael Hatlelid, to associate professor of medicine; Jeffrey J. Gordon, to associate professor of medicine; Mac O. Gordon, to assistant professor of biostatistics; David I. Gottlieb, to professor of neurobiology; Garrett M. Rothman, to associate professor of cancer biology in psychiatry; Laura A. H. White, to associate professor of surgery; James L. White, to associate professor of medicine; Michael D. Wright, to assistant professor of medicine.

School of Veterinary Medicine

Howard G. Wegus, to associate professor of medicine (dermatology); Richard D. West, to research assistant professor of medical psychology in psychiatry; Samuel A. Ulick, to assistant professor of medicine; Robert A. Wolf, to assistant professor of medicine; and Douglas A. Young, to research assistant professor of medicine.

Promotions with tenure

Washington University faculty and staff make news around the globe. Following is a digest of media coverage they have received during recent weeks for their scholarly activities, research and general expertise.

Have you done something noteworthy?

Have you? Presented a paper? Won an award? Been named to a commission or elected an officer of a professional organization? The Washington University Record will help spread the good news. Contributions regarding faculty and staff scholarly or professional activities are gladly accepted and encouraged. Include your full name, department, university affiliation, degree, current title and department along with a description of your noteworthy activity to Notables, Campus Box 1070. Please include a phone number.

Lasers that have revolutionized certain surgical procedures are dis- cussed by George M. Bohigian, M.D., associate professor of clinical ophthalmology, in the May 17 edition of the Orlando Sentinel. Bohi- gian believes that although the laser can be a useful surgical tool, conven- tional methods of surgery are some- times better and almost certainly less expensive. He says the use of the laser should and will continue to expand, but should be used only when it is the most appropriate and effective tool available.

The National Medal of Arts, which recognizes both artistic excellence and support of the arts, was pre- sented by President and Mrs. Ronald Reagan to Howard Nemerov, Edward Mallinckrodt Distinguished University Professor, at a White House ceremony in Washington, D.C. on July 17, 1987.
From chancellor’s fireside stories to riverboat cruise, new students will receive warm welcome to campus

From learning how to study in college, to bopping to the music of Bob Kahan Brass, Washington University’s new students will get a diverse taste of University life during Orientation Week Aug. 21–Sept. 7. Approximately 1,325 freshmen and 155 transfer students will be enrolled at the University this fall.

Highlights of the week include a welcoming address by Chancellor William H. Danforth; a three-hour cruise aboard the "The President"; with music by Bob Kahan Brass; an academic convocation in Graham Chapel that officially opens the academic year; a welcome to the city by Karen Foss, news anchor at KSDK TV Channel 5; the dean’s meeting for freshmen; and the talent show, featuring the chancellor telling his popular fireside stories.

There also will be academic advising sessions, dances, picnics, a student activities fair, barbecues, sorority and fraternity rush happenings, a giant plant sale, open house events for the College of Arts and Sciences and the South-40 Computer Center, the Washington University Olympics featuring eccentric competitions, and workshops on subjects ranging from test-taking tactics to time management.

Approximately 150 freshmen and 25 student counselors are expected to attend Freshman Camp, which is designed to help ease the students’ transition to college life. The camp will be held Aug. 18-20 at Trout Lodge, a YMCA facility near Potosi, Mo. Among the topics to be explored are communication skills, jobs and money management, and drugs and alcohol awareness.

In addition to the events scheduled for students, an orientation program for parents will be held Aug. 21 and 22. Highlights include a welcoming address by Danforth and presentations by faculty members Howard Nemerov, Edward Mallinckrodt Distinguished University Professor of English, and Raymond L. Hilgert, D.B.A., professor of management and industrial relations. Nemerov, recipient of the National Medal of Arts and the Pulitzer Prize, will read and discuss his works during a talk on "Poetry and Prose Relative to Education." Hilgert will speak on "Whatever Happened to Ethics in Business and Education?"

The schedule also will feature dean’s meetings for parents, a reception hosted by the chancellor and his wife, Elizabeth, and a discussion on letting go of college-bound children.

Several activities are slated for Washington’s new international and black students during Orientation Week. Among the events for international students are a formal orientation program, a reception hosted by the Danforths, a bus tour of St. Louis, a trip to Meramec Caverns near Stanton, Mo., and discussions designed to acquaint the students with Washington University and the city. The Danforths also will host a picnic for transfer students.

On Sunday, Aug. 23, local area black churches will provide shuttle buses to transport students to their congregations. Various denominations will be represented. The Association of Black Students (ABS) is sponsoring the event. In addition, ABS is sponsoring a lecture by Attorney and professional orator Patricia Russell-McCloud, who will discuss the black students’ role on a predominantly white campus. Other ABS-sponsored activities include a formal welcoming ceremony, where new black students will meet administrators and other students; a pool party and barbecue; and a Labor Day picnic at Creve Coeur Park. The College of Arts and Sciences will sponsor a reception for black students as well.

Approximately 300 more freshmen will live in the residence halls this year than last year, according to Patricia Fink, area coordinator for administration in the Department of Residential Life. As of July 24, she said, the department received 1,260 freshman housing contracts. A total of 955 freshmen lived on the South-40 last year.

To accommodate the larger influx of students, Fink says the University will lease a residence hall on the Fontbonne College campus as a new all-freshman dorm. To welcome the new freshmen, the dorm has been named Washington Hall. It is located south of the University on Big Bend Boulevard.

"What we’re hoping to do is make living in Washington Hall a real first-year experience for the freshmen," Fink says. "We’re going to have some special programming from administrators and faculty. We’re very excited about it. It’s an opportunity to provide some wonderful activities outside the classroom."

Fink says six resident advisers and a head resident will work at the freshman hall. She says the dorm will house about 100 students. All of the rooms are for single occupancy. Freshmen living in the hall will be allowed to have cars and may park on the lot behind the building.

This year, transfer students will not be offered housing on the South-40 because of the large freshman class. Fink says many transfer students will live off campus in Parkview Village and Delhavilere Place, where the University leases apartments.

"We’re also offering a good incentive for upperclassmen who have University housing to move to Delhavilere Place," Fink says. "Two-bedroom furnished apartments at Delhavilere Place are being offered at a rate comparable to that of a double room in the residence halls. We’re hoping about 100 upperclassmen will move to Delhavilere Place under this arrangement."

For more information about Orientation Week, call Marcia Hayes-Harris at 889-6679.